FIG. 1

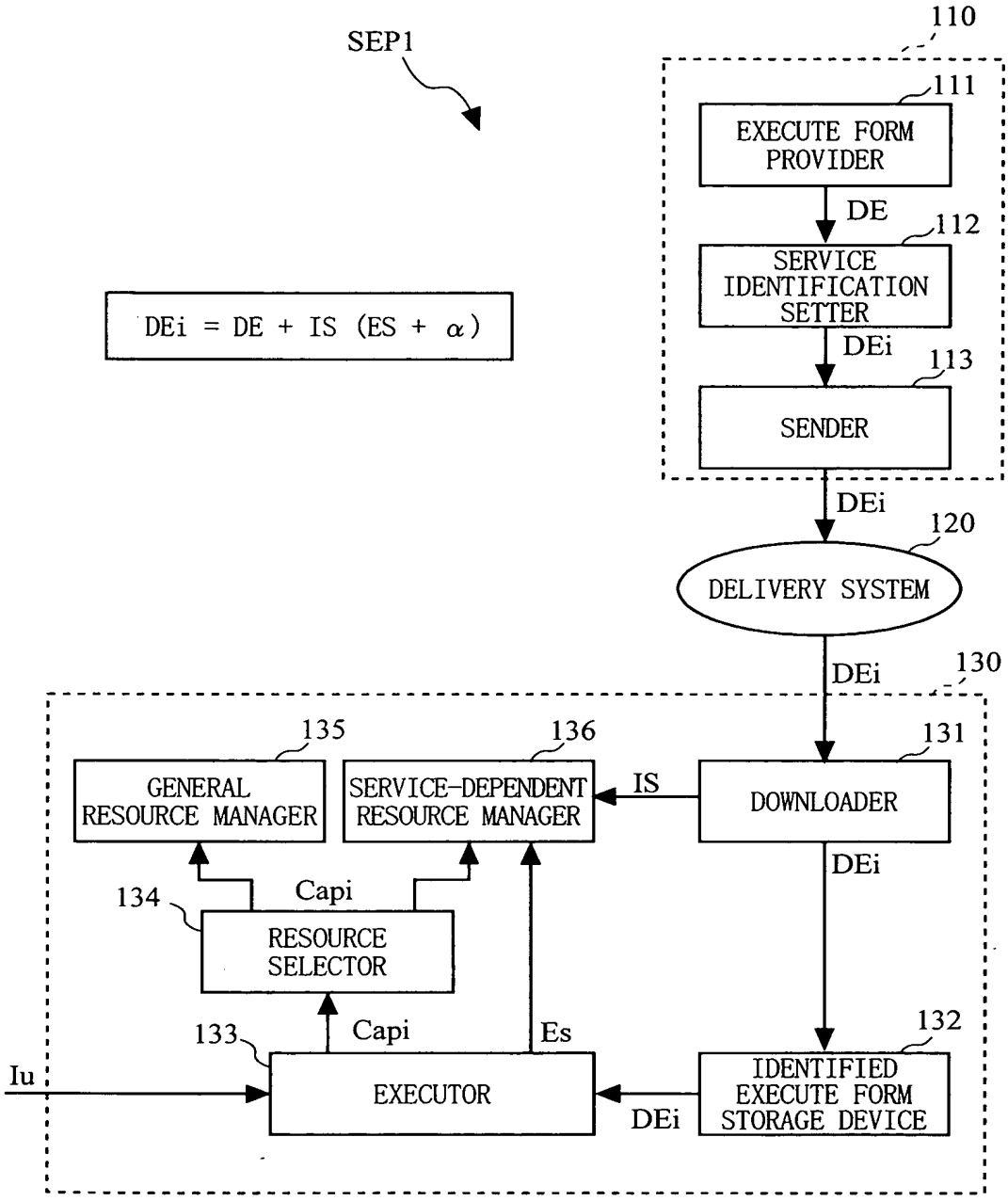

SEP1
DEi = DE + IS (ES + α)
110
111
EXECUTE FORM PROVIDER
DE
112
SERVICE IDENTIFICATION SETTER
DEi
113
SENDER
DEi
120
DELIVERY SYSTEM
DEi
130
135
GENERAL RESOURCE MANAGER
136
SERVICE-DEPENDENT RESOURCE MANAGER
IS
131
DOWNLOADER
DEi
134
Capi
RESOURCE SELECTOR
133
Capi
Es
132
Iu
EXECUTOR
DEi
IDENTIFIED EXECUTE FORM STORAGE DEVICE

FIG. 2

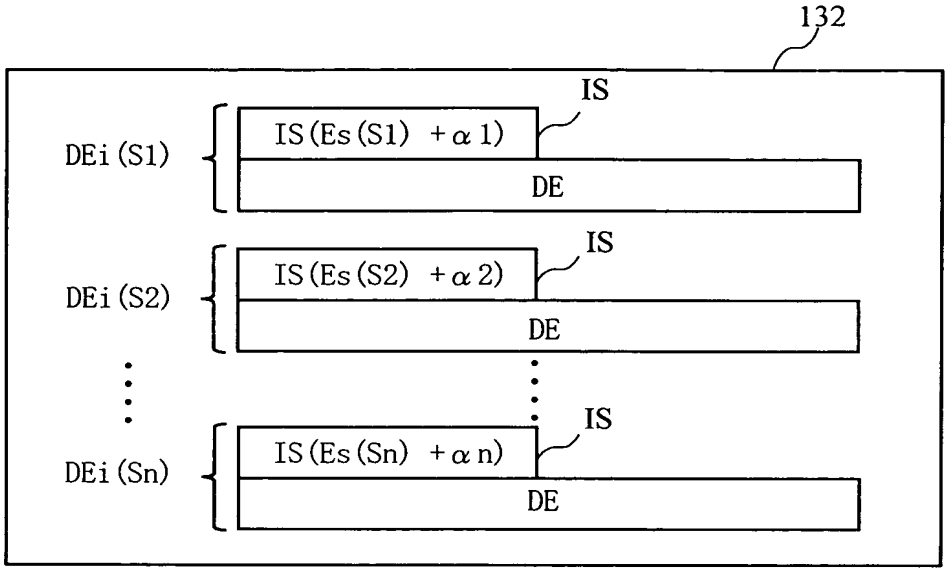

132
IS
DEi(S1)
IS(Es(S1) +α1)
DE
IS
DEi(S2)
IS(Es(S2) +α2)
DE
IS
DEi(Sn)
IS(Es(Sn) +αn)
DE

FIG. 3

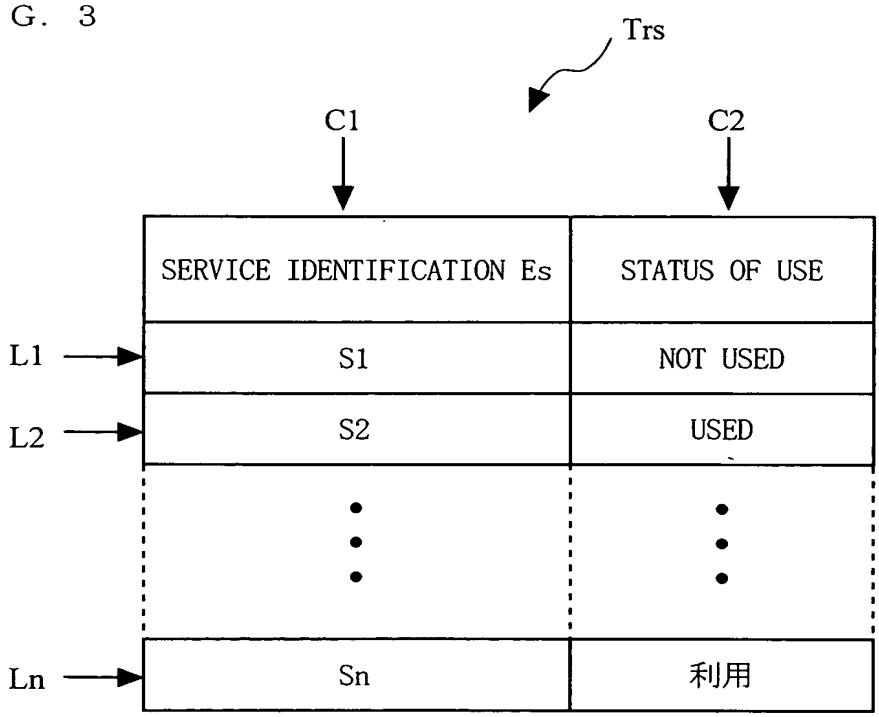

Trs
C1
C2
SERVICE IDENTIFICATION Es
STATUS OF USE
L1
S1
NOT USED
L2
S2
USED
Ln
Sn
利用

FIG. 4

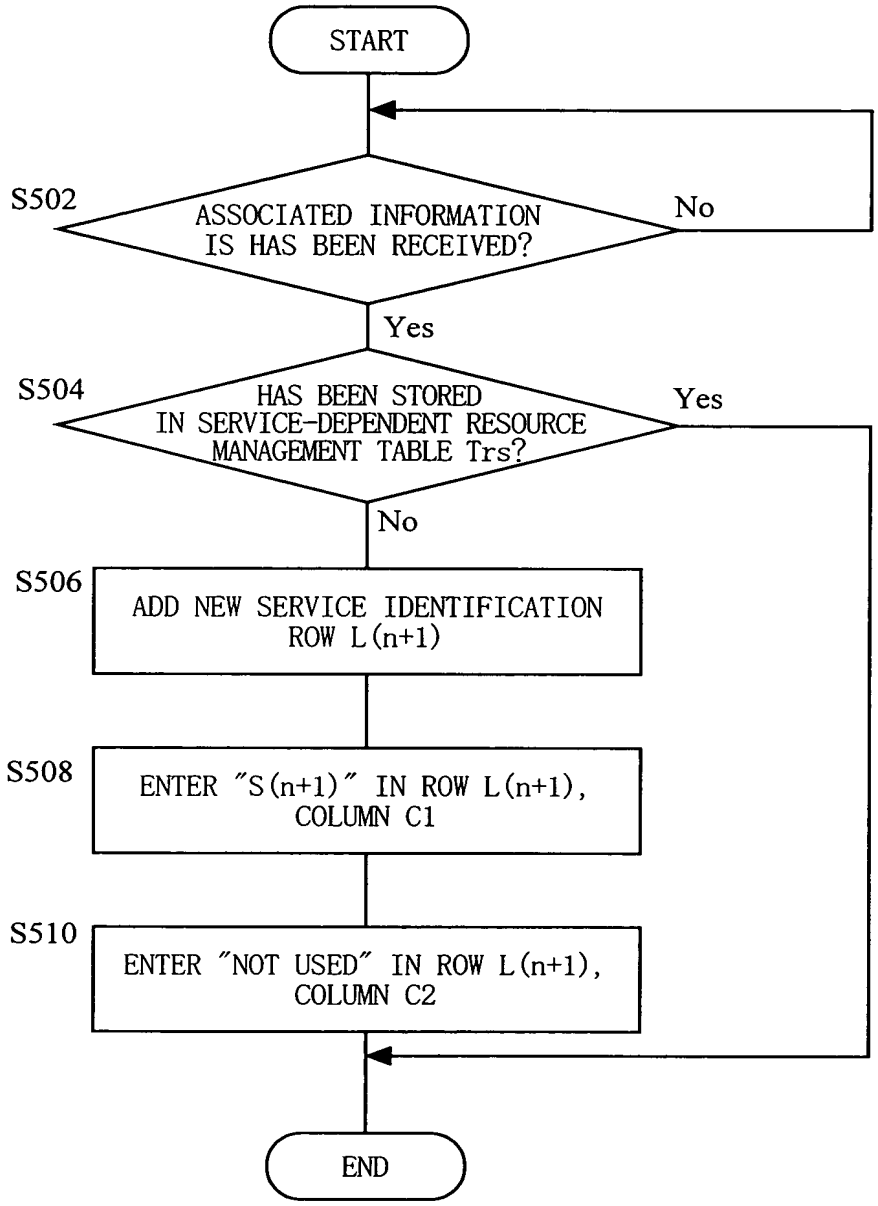

START
S502
ASSOCIATED INFORMATION IS HAS BEEN RECEIVED?
No
Yes
S504
HAS BEEN STORED IN SERVICE-DEPENDENT RESOURCE MANAGEMENT TABLE Trs?
Yes
No
S506
ADD NEW SERVICE IDENTIFICATION ROW L(n+1)
S508
ENTER "S(n+1)" IN ROW L(n+1), COLUMN C1
S510
ENTER "NOT USED" IN ROW L(n+1), COLUMN C2
END

FIG. 5

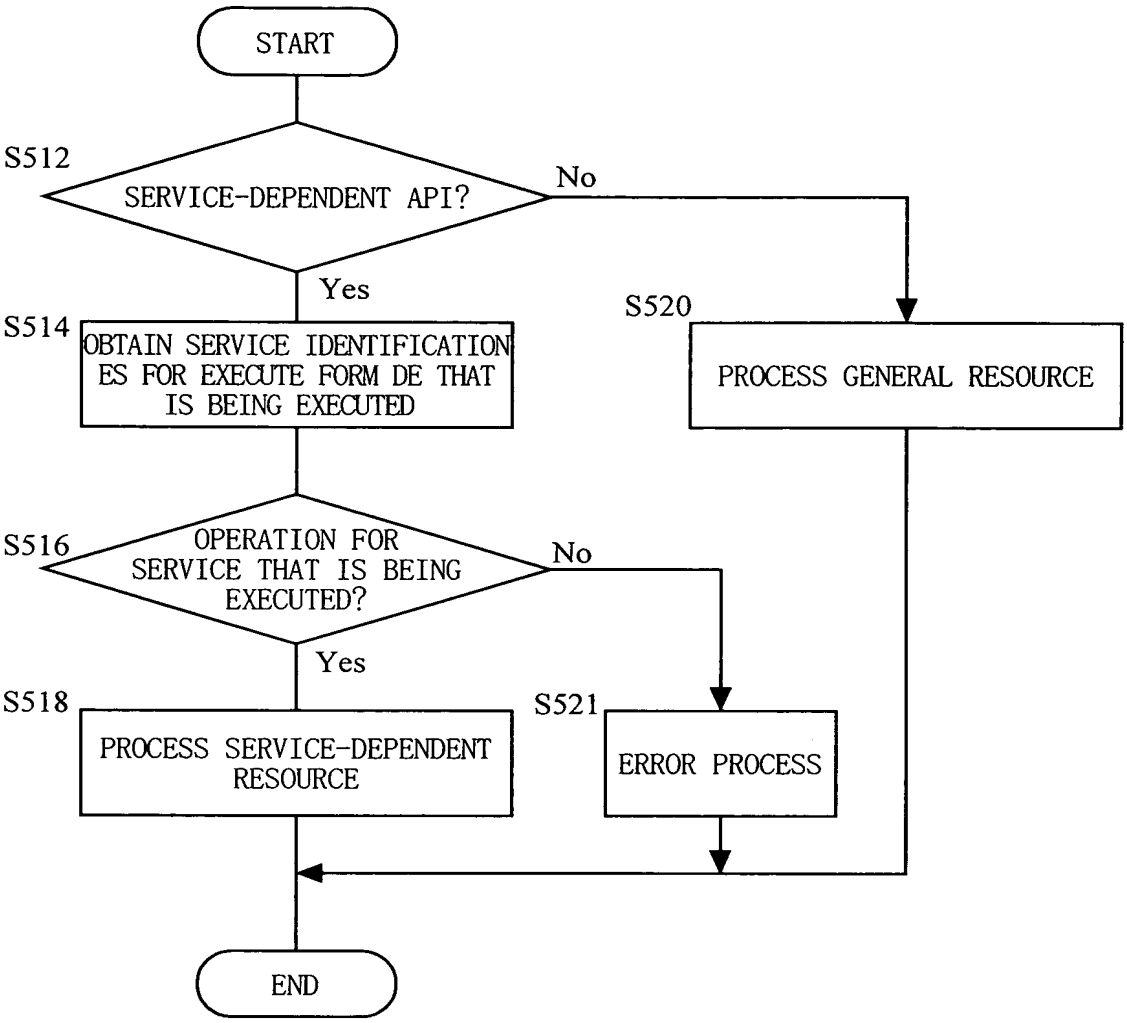

START
S512
SERVICE-DEPENDENT API?
No
Yes
S514
OBTAIN SERVICE IDENTIFICATION ES FOR EXECUTE FORM DE THAT IS BEING EXECUTED
S520
PROCESS GENERAL RESOURCE
S516
OPERATION FOR SERVICE THAT IS BEING EXECUTED?
No
Yes
S518
PROCESS SERVICE-DEPENDENT RESOURCE
S521
ERROR PROCESS
END

FIG. 6

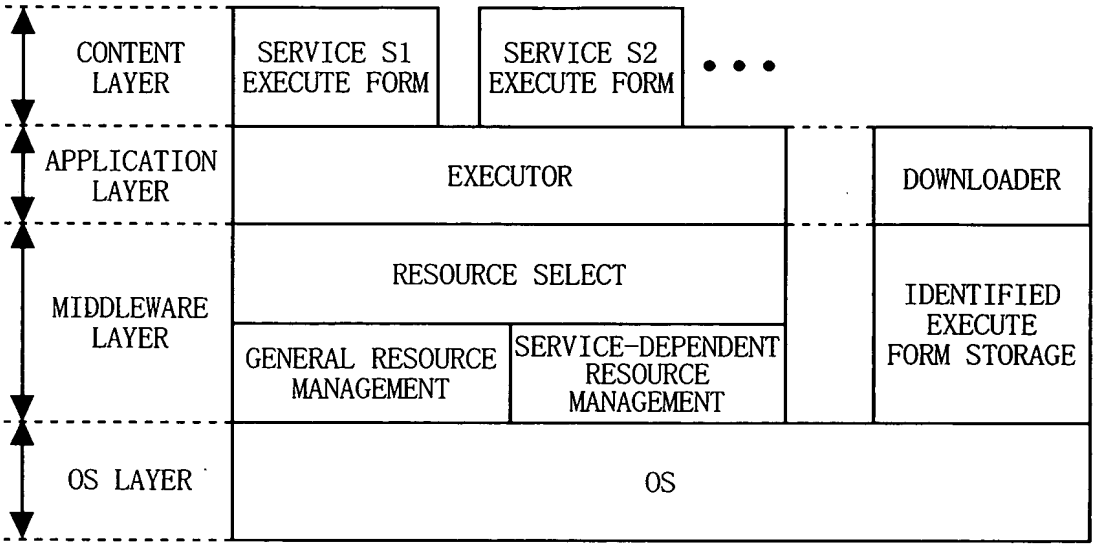

CONTENT LAYER
SERVICE S1 EXECUTE FORM
SERVICE S2 EXECUTE FORM
APPLICATION LAYER
EXECUTOR
DOWNLOADER
MIDDLEWARE LAYER
RESOURCE SELECT
GENERAL RESOURCE MANAGEMENT
SERVICE-DEPENDENT RESOURCE MANAGEMENT
IDENTIFIED EXECUTE FORM STORAGE
OS LAYER
OS

FIG. 7

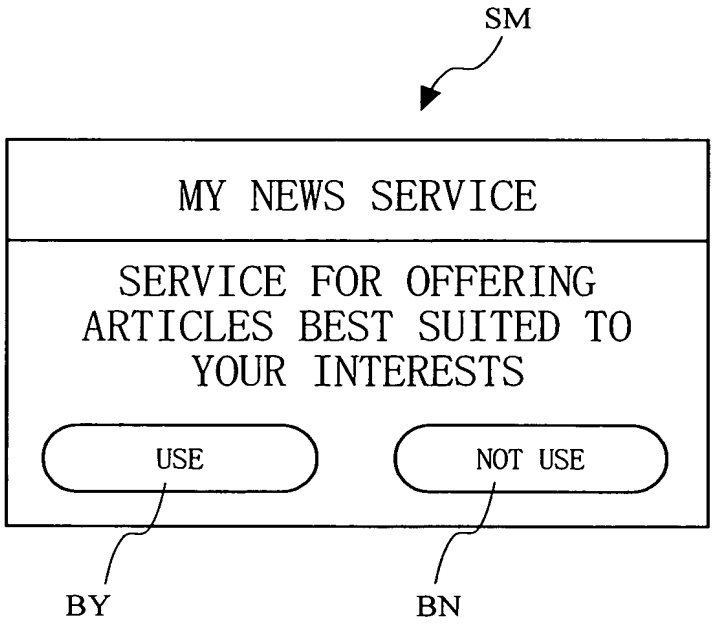

SM
MY NEWS SERVICE
SERVICE FOR OFFERING ARTICLES BEST SUITED TO YOUR INTERESTS
USE
NOT USE
BY
BN

FIG. 8

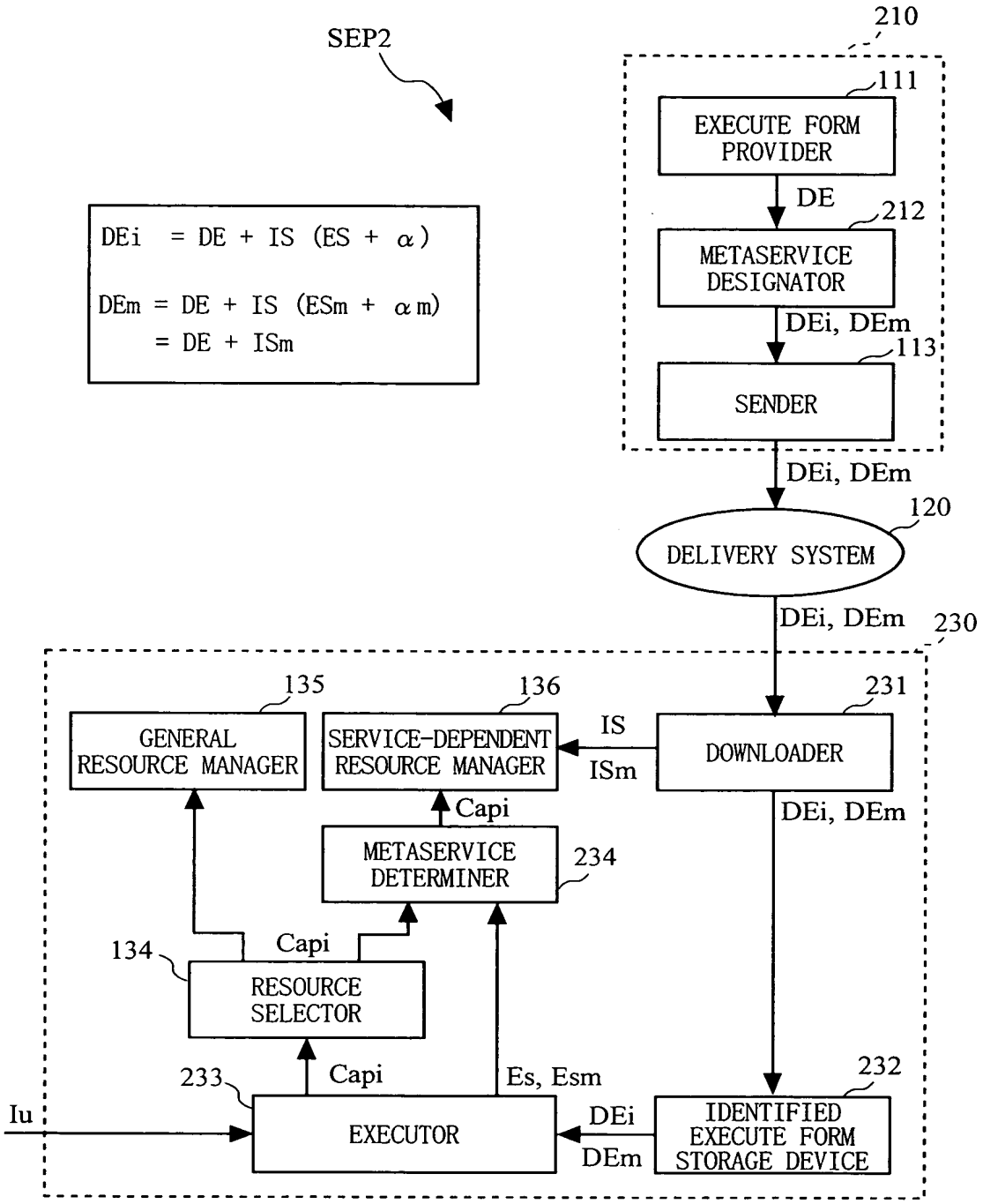

SEP2
DEi = DE + IS (ES + α)
DEm = DE + IS (ESm + αm)
= DE + ISm
210
111
EXECUTE FORM PROVIDER
DE
212
METASERVICE DESIGNATOR
DEi, DEm
113
SENDER
DEi, DEm
120
DELIVERY SYSTEM
DEi, DEm
230
135
GENERAL RESOURCE MANAGER
136
SERVICE-DEPENDENT RESOURCE MANAGER
IS
ISm
231
DOWNLOADER
Capi
DEi, DEm
METASERVICE DETERMINER
234
134
Capi
RESOURCE SELECTOR
233
Capi
Es, Esm
232
Iu
EXECUTOR
DEi
DEm
IDENTIFIED EXECUTE FORM STORAGE DEVICE

FIG. 9

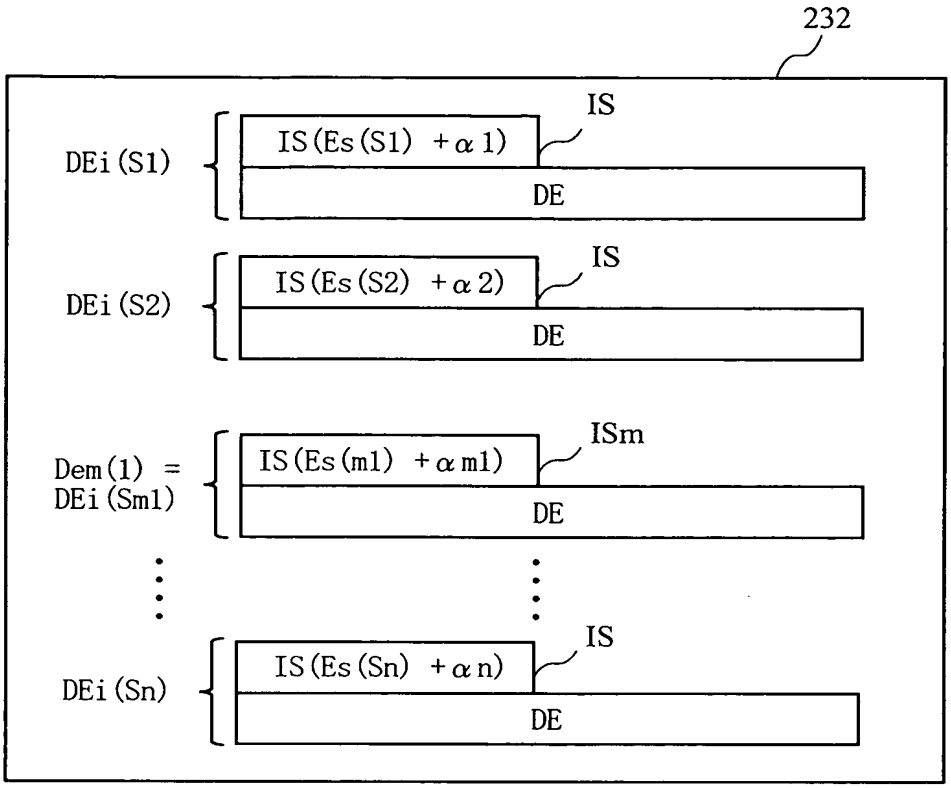

232
DEi(S1)
IS(Es(S1) +α1)
IS
DE
DEi(S2)
IS(Es(S2) +α2)
IS
DE
Dem(1) =
DEi(Sm1)
IS(Es(m1) +αm1)
ISm
DE
DEi(Sn)
IS(Es(Sn) +αn)
IS
DE

FIG. 10

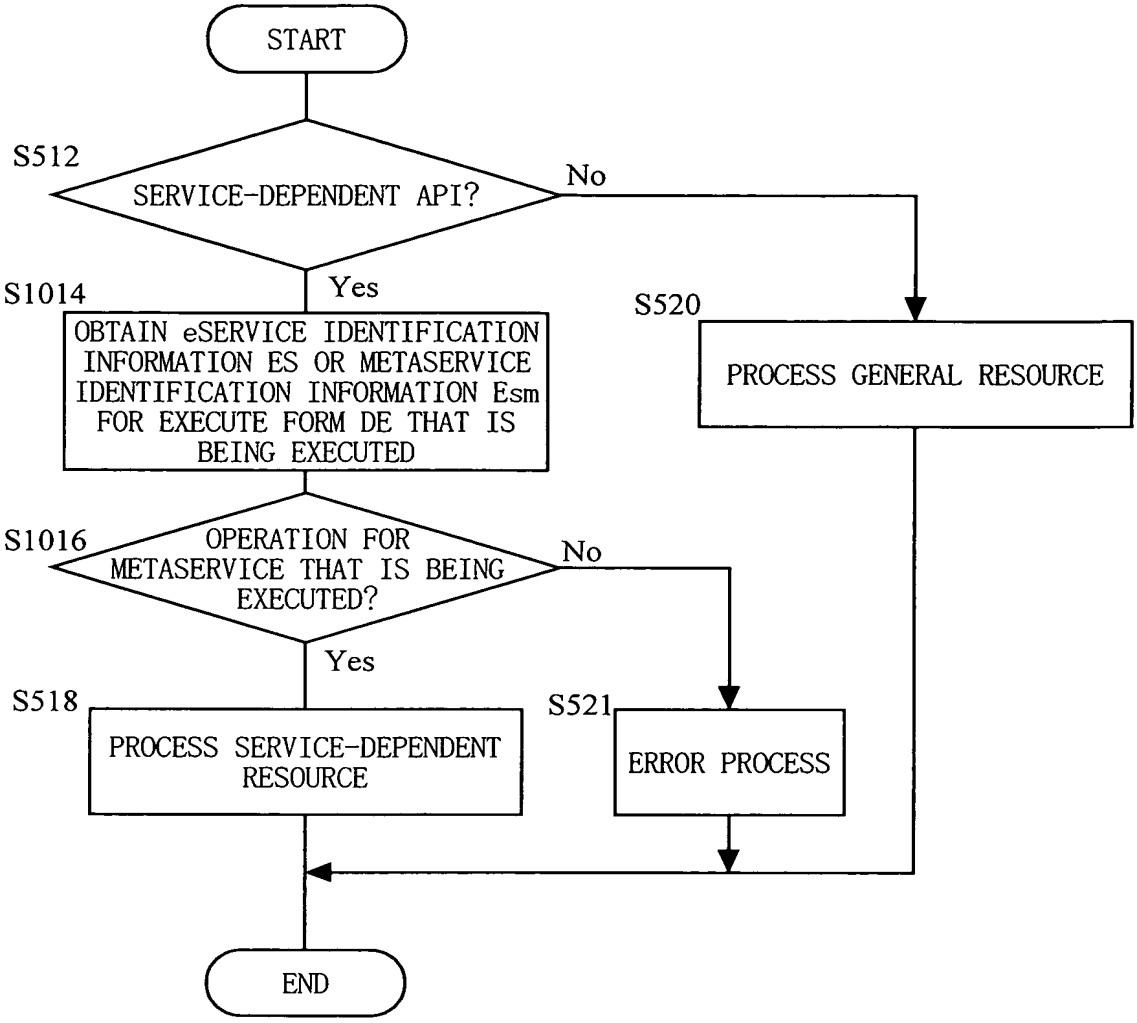

START
S512
SERVICE-DEPENDENT API?
No
Yes
S1014
OBTAIN eSERVICE IDENTIFICATION INFORMATION ES OR METASERVICE IDENTIFICATION INFORMATION Esm FOR EXECUTE FORM DE THAT IS BEING EXECUTED
S520
PROCESS GENERAL RESOURCE
S1016
OPERATION FOR METASERVICE THAT IS BEING EXECUTED?
No
Yes
S518
PROCESS SERVICE-DEPENDENT RESOURCE
S521
ERROR PROCESS
END

FIG. 11

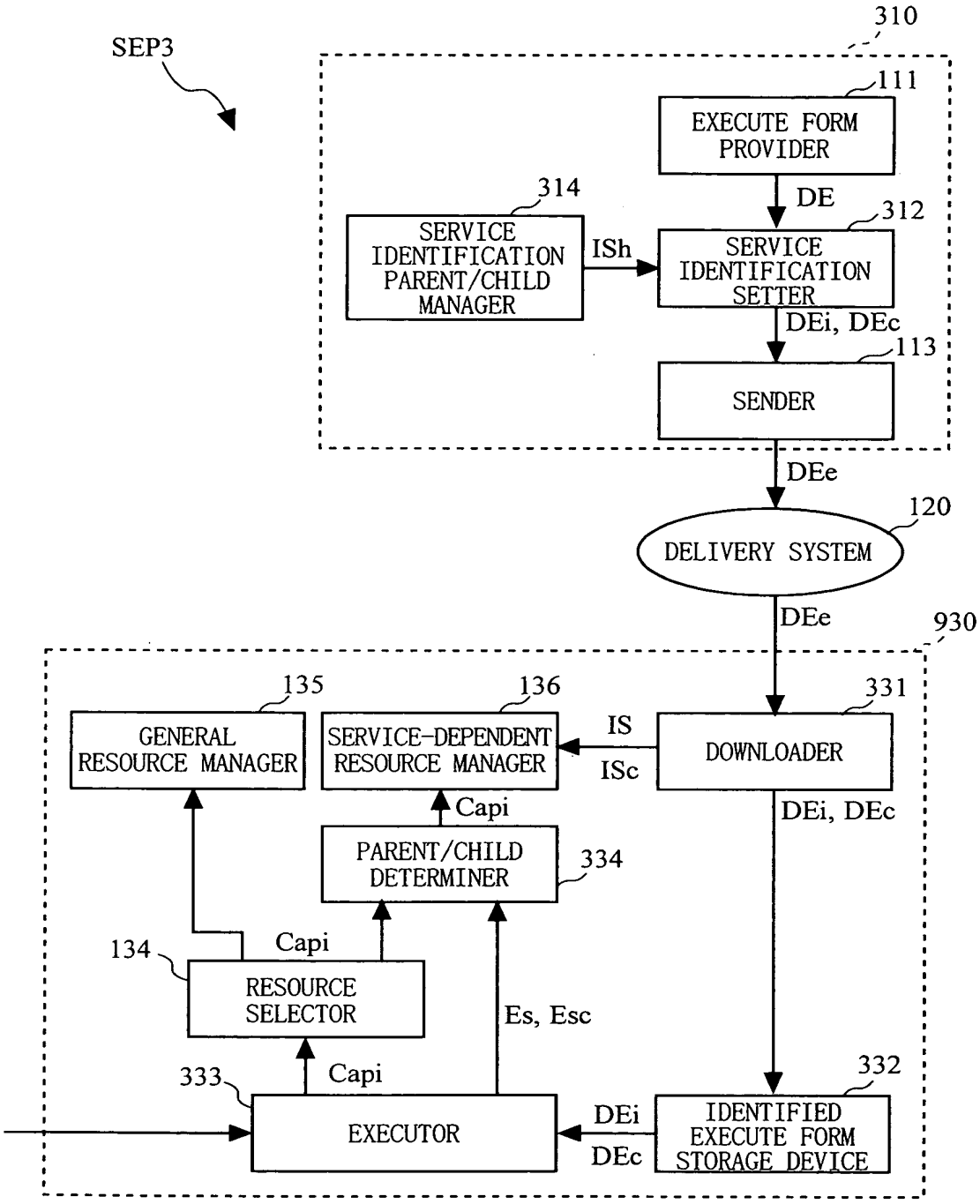

SEP3
310
111
EXECUTE FORM PROVIDER
DE
314
SERVICE IDENTIFICATION PARENT/CHILD MANAGER
ISh
312
SERVICE IDENTIFICATION SETTER
DEi, DEc
113
SENDER
DEe
120
DELIVERY SYSTEM
DEe
930
135
GENERAL RESOURCE MANAGER
136
SERVICE-DEPENDENT RESOURCE MANAGER
IS
ISc
331
DOWNLOADER
Capi
DEi, DEc
PARENT/CHILD DETERMINER
334
134
Capi
RESOURCE SELECTOR
Es, Esc
333
Capi
EXECUTOR
DEi
DEc
332
IDENTIFIED EXECUTE FORM STORAGE DEVICE

FIG. 12

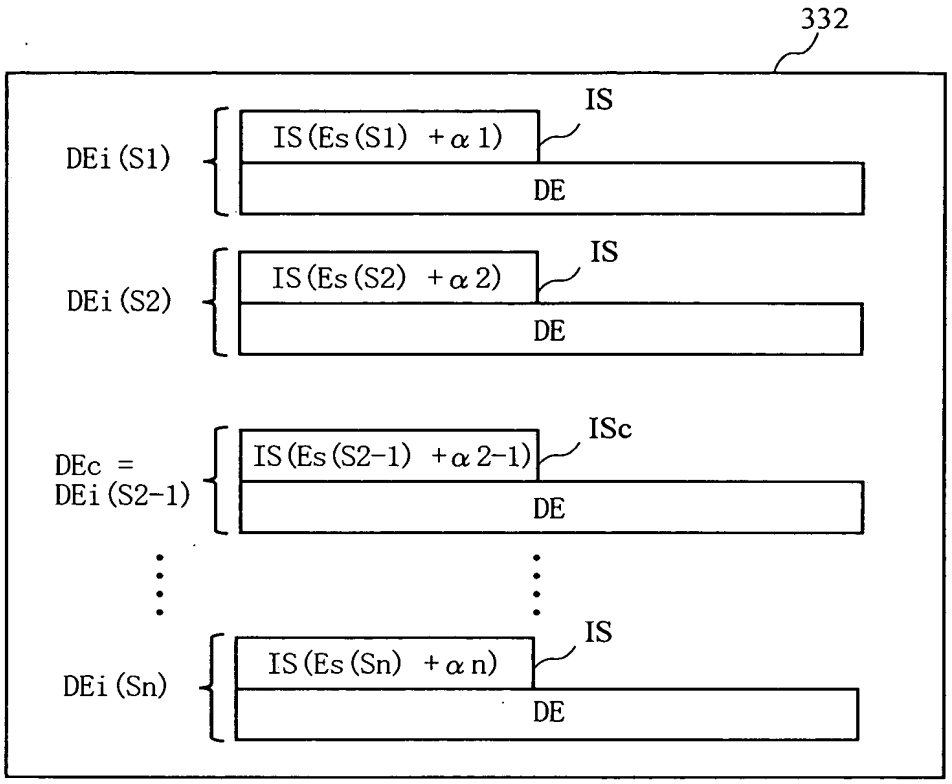

332
IS
IS(Es(S1) +α1)
DEi(S1)
DE
IS
IS(Es(S2) +α2)
DEi(S2)
DE
ISc
IS(Es(S2-1) +α2-1)
DEc =
DEi(S2-1)
DE
IS
IS(Es(Sn) +αn)
DEi(Sn)
DE

FIG. 13

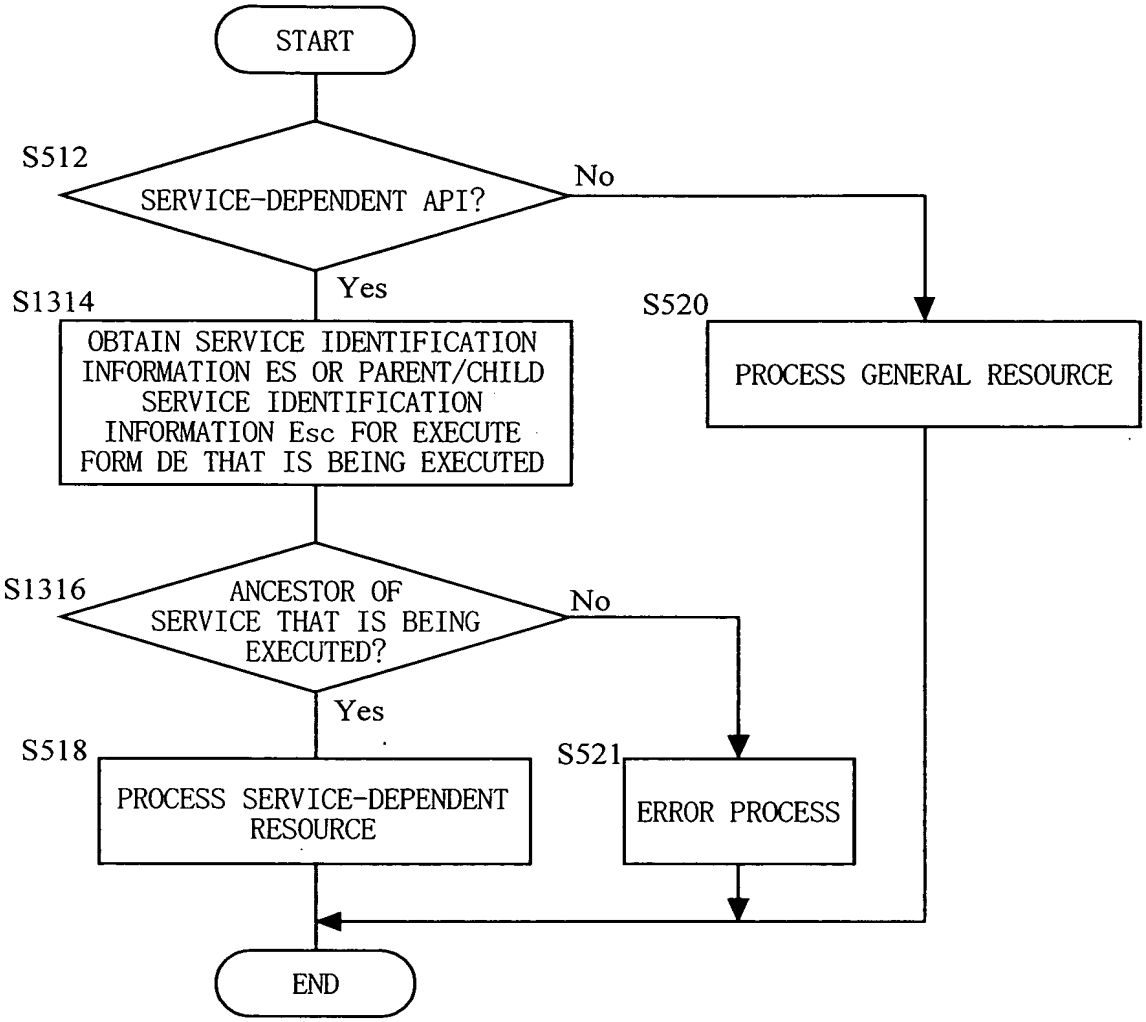

START
S512
SERVICE-DEPENDENT API?
No
Yes
S1314
OBTAIN SERVICE IDENTIFICATION INFORMATION ES OR PARENT/CHILD SERVICE IDENTIFICATION INFORMATION Esc FOR EXECUTE FORM DE THAT IS BEING EXECUTED
S520
PROCESS GENERAL RESOURCE
S1316
ANCESTOR OF SERVICE THAT IS BEING EXECUTED?
No
Yes
S518
PROCESS SERVICE-DEPENDENT RESOURCE
S521
ERROR PROCESS
END

FIG. 14

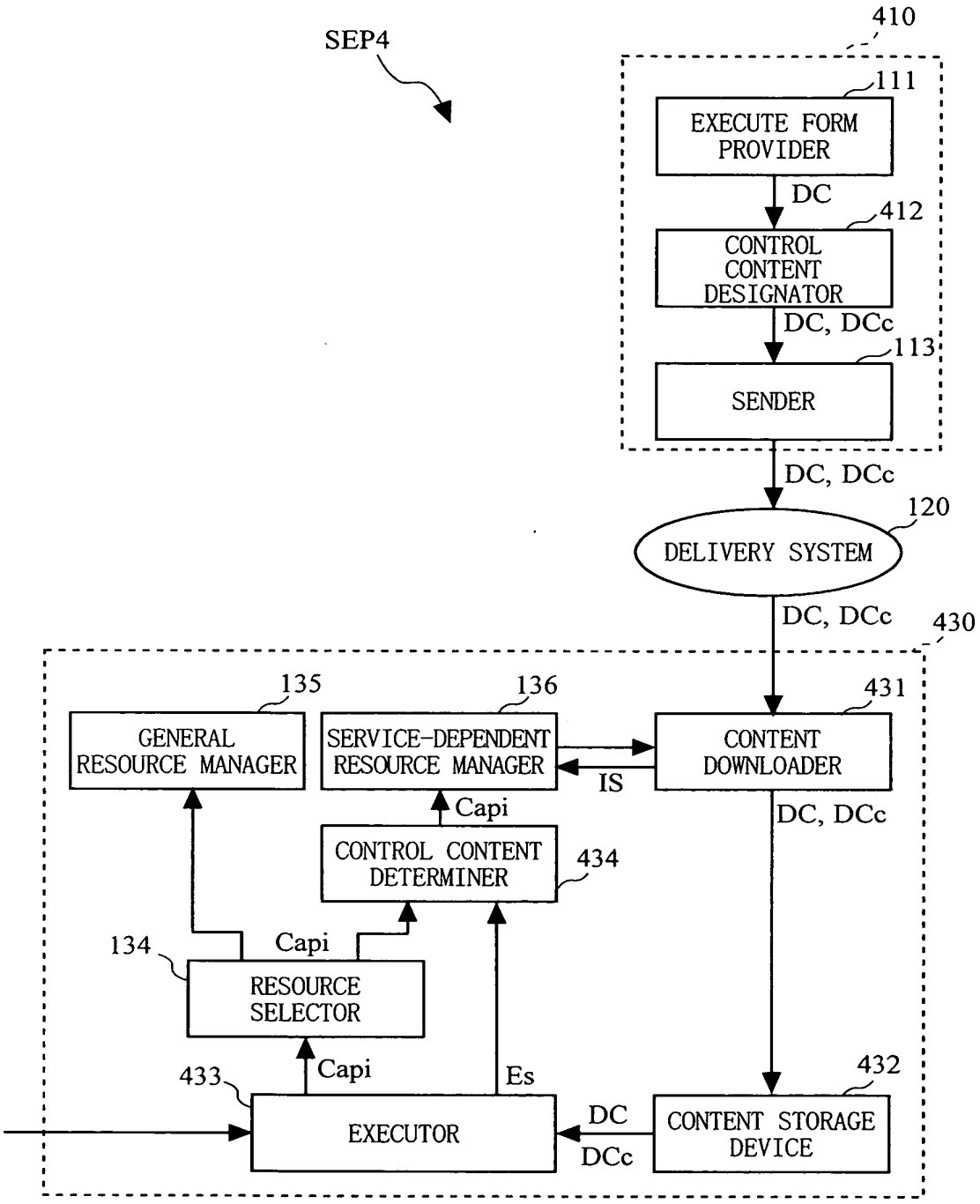

SEP4
410
111
EXECUTE FORM PROVIDER
DC
412
CONTROL CONTENT DESIGNATOR
DC, DCc
113
SENDER
DC, DCc
120
DELIVERY SYSTEM
DC, DCc
430
135
GENERAL RESOURCE MANAGER
136
SERVICE-DEPENDENT RESOURCE MANAGER
431
CONTENT DOWNLOADER
IS
Capi
DC, DCc
CONTROL CONTENT DETERMINER
434
134
Capi
RESOURCE SELECTOR
Capi
433
Es
432
EXECUTOR
DC
DCc
CONTENT STORAGE DEVICE

FIG. 15

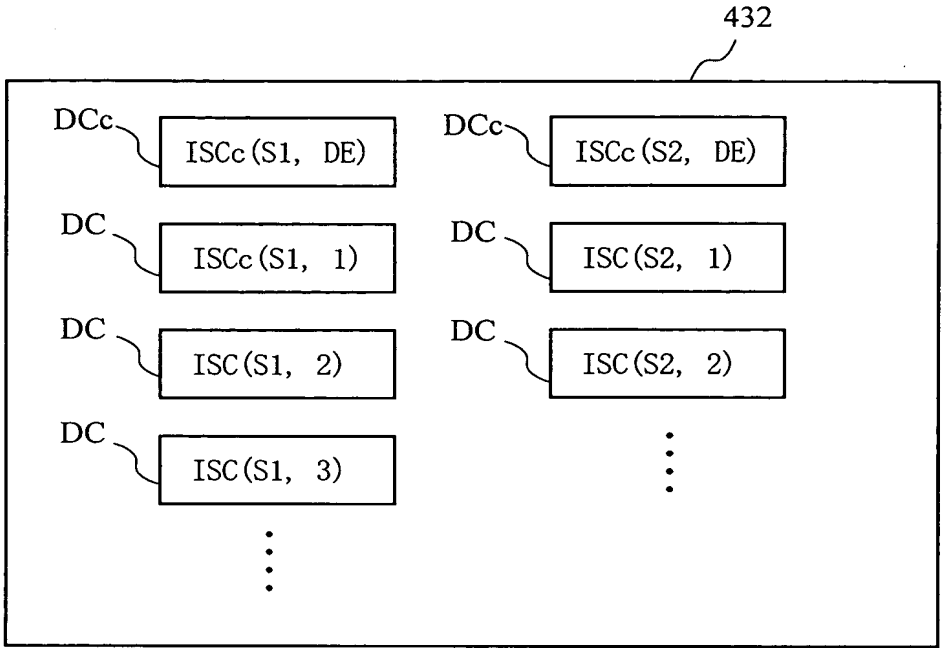

432
DCc
ISCc(S1, DE)
DCc
ISCc(S2, DE)
DC
ISCc(S1, 1)
DC
ISC(S2, 1)
DC
ISC(S1, 2)
DC
ISC(S2, 2)
DC
ISC(S1, 3)

FIG. 16

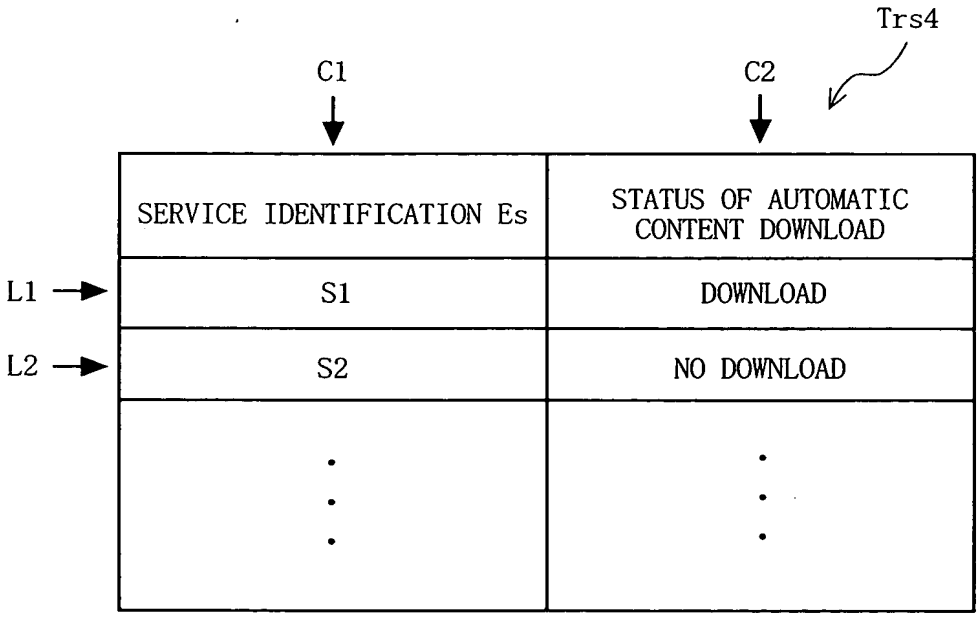

Trs4
C1
C2
SERVICE IDENTIFICATION Es
STATUS OF AUTOMATIC CONTENT DOWNLOAD
L1
S1
DOWNLOAD
L2
S2
NO DOWNLOAD

FIG. 17

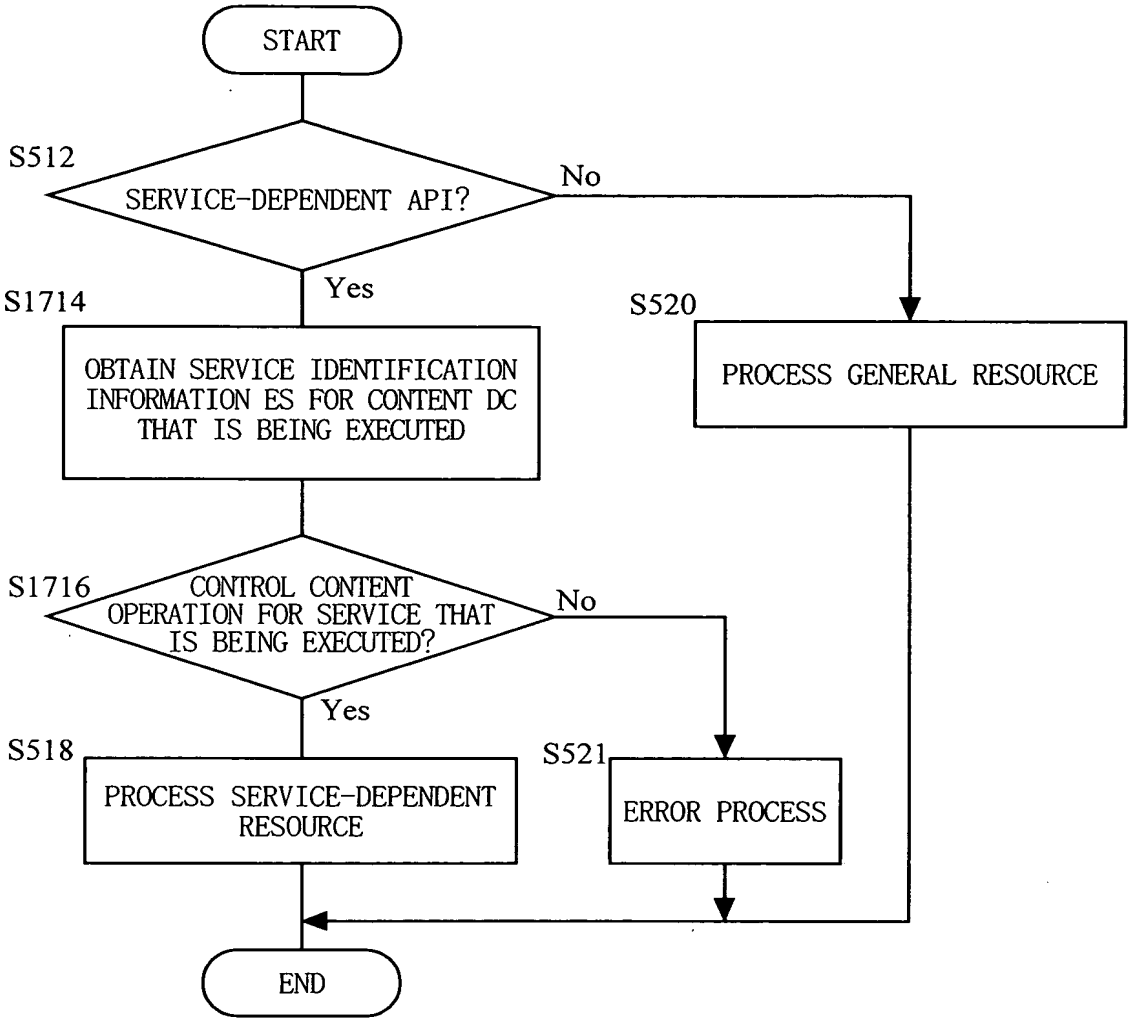

START
S512
SERVICE-DEPENDENT API?
No
Yes
S1714
OBTAIN SERVICE IDENTIFICATION INFORMATION ES FOR CONTENT DC THAT IS BEING EXECUTED
S520
PROCESS GENERAL RESOURCE
S1716
CONTROL CONTENT OPERATION FOR SERVICE THAT IS BEING EXECUTED?
No
Yes
S518
PROCESS SERVICE-DEPENDENT RESOURCE
S521
ERROR PROCESS
END

FIG. 18

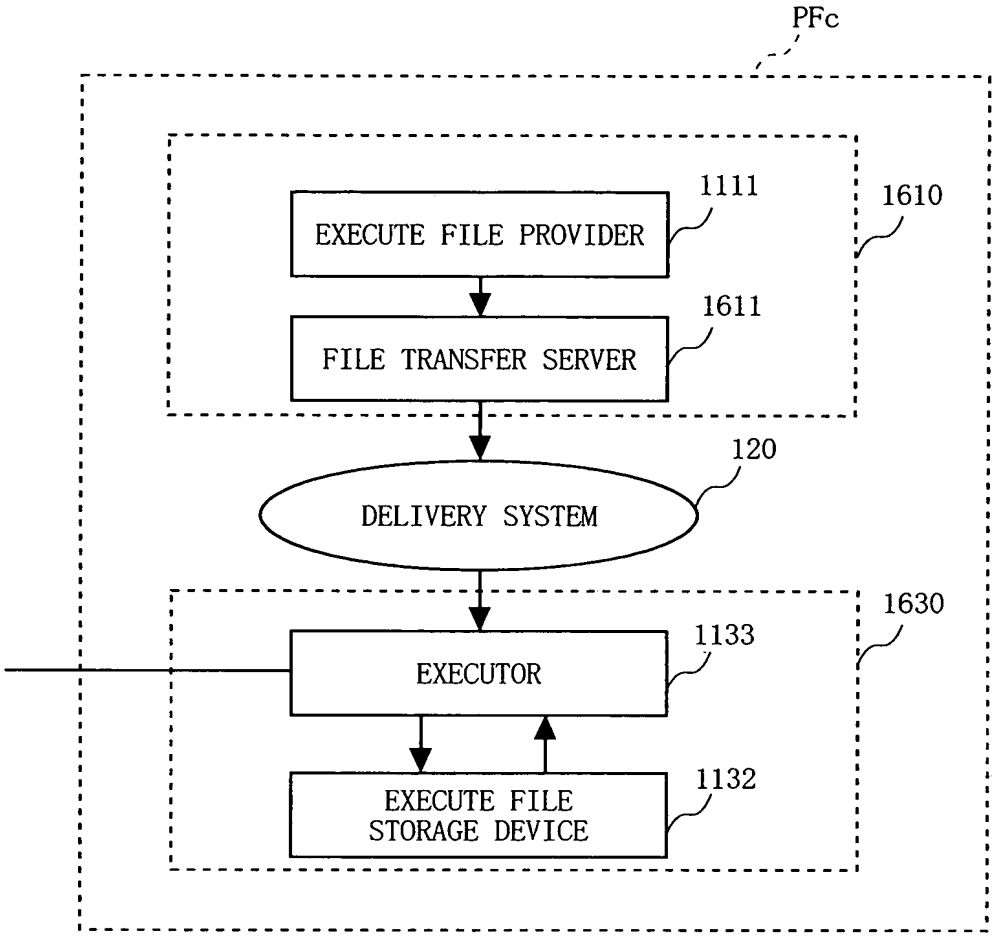

PFc
1610
1111
EXECUTE FILE PROVIDER
1611
FILE TRANSFER SERVER
120
DELIVERY SYSTEM
1630
1133
EXECUTOR
1132
EXECUTE FILE
STORAGE DEVICE

FIG. 19

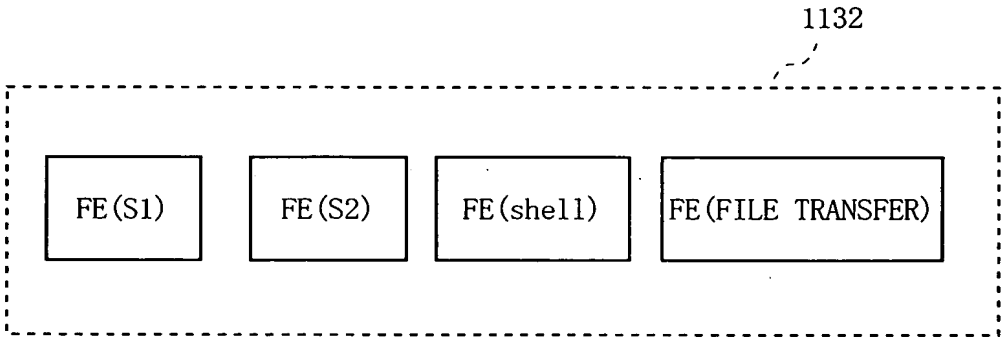
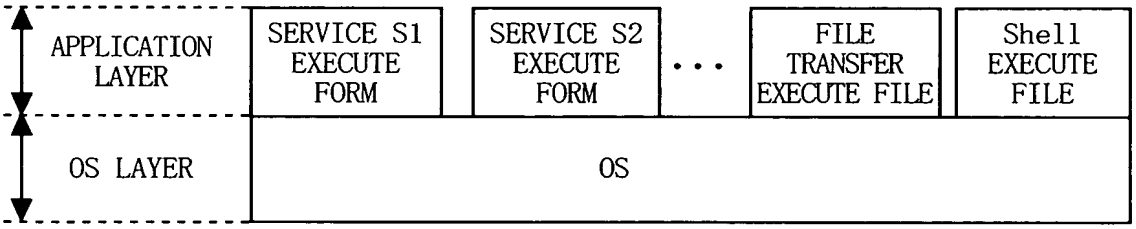

1132
FE(S1)
FE(S2)
FE(shell)
FE(FILE TRANSFER)

FIG. 20


APPLICATION LAYER
OS LAYER
SERVICE S1 EXECUTE FORM
SERVICE S2 EXECUTE FORM
...
FILE TRANSFER EXECUTE FILE
Shell EXECUTE FILE
OS